

AMENDMENT

Amendment to the Specification

Please replace paragraph [0003] with the following amended paragraph:

Early designs suffered from having rudimentary car assignment protocols that did not adjust to peak usage times. For example, during a “peak up” period, such as at the beginning of the workday, many people wish to use the elevator system from the ground floor. There is the reverse situation during a “peak down” period. The elevator system was not responsive to the number of passengers waiting at any given floor nor to their desired destination. Consequently, passengers tended to crowd onto the first available car, which then had to stop at numerous floors. The next available car would then be less crowded, but may very well have to stop at some of the very same ~~floor~~ floors as the first car.

Please replace paragraph [0008] with the following amended paragraph:

These known elevator destination protocols are often constrained by the physical accessibility to the various elevator cars from the waiting area. Having not all of the elevators serve the same set of floors introduces difficulty, such as when one elevator serves fewer floors than the rest. Without knowledge of the passenger’s desired destination, this car with limited service may be inadvertently dispatched to pickup the passenger. To address this problem, often an extra set of hall call buttons are added for each set of elevator cars that serve the same subset of floors, relying upon the passengers to read signage directing them to the appropriate bank of elevators.

Please replace paragraph [0012] with the following amended paragraph:

In one aspect of the invention, a method and system are provided wherein a graphical hall call device displays elevator car accessibility on that floor along with assigned destinations for those accessible elevator cars. The graphical hall call device generates a destination confirmation

event so that a user knows that his desired destination has been properly assigned. Thereby, the user avoids an undue wait or frustration in instances wherein an invalid destination has been input or a validly input destination has been assigned without the user understanding ~~[[he]]~~ the assignment.

Please replace paragraph [0015] with the following amended paragraph:

FIGURE 1 is a diagram of an elevator system including an elevator predestination protocol control with hallway intuitive user interfaces and traditional in-car elevator controls.

Please replace paragraph [0020] with the following amended paragraph:

FIGURE 6 is a ~~planform~~ plan view diagram of an elevator waiting area.

Please replace paragraph [0021] with the following amended paragraph:

FIGURE 7 is a graphical hallway call device displaying car assignments in relation to an oriented ~~planform~~ plan view diagram for accessible elevator cars.

Please replace paragraph [0025] with the following amended paragraph:

FIG. 2 depicts a predestination elevator control 50 that optimizes elevator car assignments for the elevator system 10. A group supervisory computer 52 receives traditional hall call user inputs 54 and/or predestination hall call inputs 56 and communicates these requests along with elevator car status (e.g., location, operability) via an RS-422 channel to an intelligence computer 58 that makes elevator car assignments in accordance with fuzzy logic control. The group supervisory computer 52 provides confirmation of the elevator car assignment back to the traditional hall call user inputs 54 and/or predestination hall call user inputs 56.

Please replace paragraph [0027] with the following amended paragraph:

The predestination protocol computer 60 may also have its administrator control set to a predestination mode wherein a graphical hall call device on the first floor (“elevator controller #1”) 68 and any other graphical hall call devices (~~“elevator controller #N”~~) (“elevator controller #N”) 70 on other floors are active.

Please replace paragraph [0029] with the following amended paragraph:

FIG. 3 depicts a software environment 72 for operating a predestination protocol computer 60 of FIG. 2. An input/output module 74 monitors for a manual input from a user (“floor button pushed”) 76 and passes this digital input data along with the originating floor to a main process 78. The main process 78 provides confirmation that ~~that~~ the destination requested is valid, communicating this validity via a paint function data to a graphical screen 80. The main process 78 conveys the digital input data (i.e., destination requested and originating floor) to a communication module 82, which in turn relays this information to the group supervisor computer 52. The communication module 82 in turn receives information from the group supervisory computer 52 to include communication status, car assignment data including assignment of any recently conveyed destination request, and location of the elevator cards, and conveys the same to the main process 78.

Please replace paragraph [0030] with the following amended paragraph:

The main process 78 intuitively communicates the car assignment ~~[[ef]]~~ for the destination request by ~~painting~~ displaying it ~~[[te]]~~ on the graphic screen 80 and/or by initiating audio cues from a sound card 84. For instance, the sound card 84 may give a verbal confirmation for the visually impaired that a specific destination has been assigned to a specific car. The sound card 84 could also give verbal directions to an assigned car when it opens on the originating floor, telling the prospective riders that floors assigned to that car.

Please replace paragraph [0031] with the following amended paragraph:

FIG. 4 depicts an illustrative sequence of operation, or routine 100, performed by the predestination protocol computer 60 for intuitively interacting with users of an elevator system. Initially, a determination is made as to whether a user input has been made to a graphical hall call device (block 102). If not, then a further determination has been made whether no input has been made for a period of time (e.g., 30 seconds) (block 104). If more than the period of time has elapsed, then any data input to the graphical hall call device is cleared from the screen (block 106). This clearing prepares the screen for another user after having given sufficient time for the previous user to interact with the graphical hall call device. After either clearing the screen in block 106 or determining that the time period has not expired in block 104, processing returns to block 102 to monitor for new user inputs.

Please replace paragraph [0039] with the following amended paragraph:

FIG. 5 depicts a graphical hall call device 200 that is providing intuitive feedback to a user so that predestination protocol for efficient use is achieved ~~[[ef]]~~ by the elevator system. Although dedicated floor keys may be incorporated into the device 200, a keypad 202 advantageously allows for use in buildings having various ranges of floors. Specialized keys such as a “B” key 204 for basement designations may be included, as well as special function keys such as a “#” key 206 used by an administrator to access security and administrative configuration functions. A clear key 208 allows for inadvertent key entries to be cleared and an entry key 210 signals that a data entry has been completed by a user.

Please replace paragraph [0044] with the following amended paragraph:

FIG. 7 shows the illustrative graphical hall call device 254 in greater detail for this scenario, wherein the car assignment information is more fully explained to the user, including spatial information to direct the user to the appropriate car.~~[[for]]~~ For instance, the user has input a destination of “21”, which has been assigned and communicated to the user. The user or other

users monitoring the screen for their own destinations may note what predestination assignments have been made for cars A-D, and may note that car E is inoperative. In addition, taking advantage of the graphical capabilities of the graphical hall call device 254, indications may be made as to where the entry points physically are for each car by arranging the car assignment information in the same ~~planform~~ plan view as the actual elevator cars. Moreover, the graphical hall call device may be configured to rotate the ~~planform~~ plan view the correct horizontal angle to conform to the installation of the device 254. The graphical hall call device 254 may further indicate which cars will be or are currently boarding on the floor, such as a visual and/or audio tone, like a flashing entry arrow 256.

Please replace paragraph [0050] with the following amended paragraph:

As another example, more than one graphical hall call device may be placed on a floor, especially to accommodate more passengers and larger or multiple elevator waiting area. Each device may advantageously tailor its ~~displace~~ display, for instance orienting car assignment information to the physical layout relative to each device. In addition, a subset of the elevator cars may be displayed on each device, with text, automated voice, and/or graphical cues directing a passenger to the other device when entering a destination floor not served by that device.

Please replace paragraph [0051] with the following amended paragraph:

As another example, although mechanical push buttons are illustrated herein, graphical hall call devices may incorporate touch screen controls instead. A further advantage of such graphically depicted inputs ~~[[are]]~~ is that the system may include readily configurable buttons with desired symbols and text appropriate for the installation. The predestination request may be processed nonetheless even if displayed on the other device.